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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WANG, QUAN ZHEN	
ART UNIT	**PAPER NUMBER**
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/027,249	MAY ET AL.	
	Examiner	Art Unit	
	Quan-Zhen Wang	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,7,10-12,14-18,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,7,10-12,14-18,24 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the Amendment filed on April 19, 2007, the Final Office Action mailed on February 22, 2007 has been withdrawn. New rejection is as follows.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Heston (M.L. Heston et al., "Use of the acoustic-optic tunable filter for optical spectrum analysis and EDFA power equalization in WDM systems", OFC'96 Technical Digest, 1996, page 249-250).

Regarding claim 1, Heston discloses a method of measuring optical signal power in an optical system (figs. 1 and 3), comprising: receiving optical signal s at a wavelength selective switch (fig. 1(B), PIAOTF); passing a subset of the optical signals comprised of more than one individual wavelength through the wavelength select switch at substantially the same time to a power meter (fig. 1(B) the detector and phase sensitive detection and equalization controller); measuring power in the subset of optical signals using the power meter (paragraph 1); and displaying (figs. 3(A) and 3(B)) an indication of the optical signal power in the optical signals on a monitor to a system administrator.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 3, 7, 12, 14, 17, 18, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) in view of Felger et al. (U.S. Patent US 5,521,701).

Regarding claim 1 and 12, Prohaska teaches a reconfigurable wavelength selective switch (figs. 5 and 7) which receives optical signals (fig. 7, $\lambda 1$-λn) from an optical system and select one of the received signals (fig. 7, λm); passing a subset of the optical signal comprised of more than one individual wavelength through the wavelength select switch at substantially the same time (figs. 5 and 7: $\lambda 1$, ... $\lambda m-1$, $\lambda m+1$, ... λn). Prohaska differs from the claimed invention in that Prohaska does not specifically teach to measure the power of the selected optical signal with a power meter. However, Felger teaches an optical power meter (fig. 1) which is utilized to measure a power level of the optical signal coupled into it and display an indication of the measured optical signal power in the optical signals. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to use the power meter taught by Felger to the system taught by Prohaska in order to

measure the optical power of one optical signal channels separated from the plurality of input optical signals of the system.

Regarding claims 3, 14, Prohaska discloses that the optical signal comprise different wavelengths of optical energy (fig. 7, $\lambda 1$, $\lambda 2$, ... λn).

Regarding claims 7, and 18, Prohaska further discloses that the wavelength select switch can successively direct a selected wavelength output to fiber 2.

Regarding claim 17, Prohaska further teaches that the optical wavelength selective switch can be applied in a DWDM system (paragraph 0018).

Regarding claims 24, Prohaska discloses combining the power of all of the optical signals in the subset (figs. 5 and 7: $\lambda 1$, $\lambda 2$, ... λn).

Regarding claim 25, it is inherent that the optical signals measure by the power meter is the combined power of the optical signals since there are not other optical signals involved in the measurement process.

4. Claims 1, 3-5, 11-12, 14-17, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya (U.S. Patent US 6,873,795 B1) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) and further in view of Felger et al. (U.S. Patent US 5,521,701).

Regarding claims 1 and 12, Sugaya discloses an apparatus (fig. 11) for measuring optical power in an optical system, comprising: a wavelength select unit (fig. 11, combination of 30 and 13) having output ports (fig. 11, outputs from element 13 and 30) to selectively pass received optical signals to one of the output ports (fig. 11, the

output from element 30 to element 31), the wavelength select unit (fig. 11, combination of 30 and 13) passes a set of the optical signals comprised of more than one individual wavelength to the one of the output ports (fig. 11, the output signals from element 30 to element 31) at the same time, and a power meter (fig. 11, PD 31; note that PD detects the power, see column 2, lines 6-12) measures the power in the subset of the optical signals (fig. 11, signals output from element 30 to PD 31); the power meter (fig. 11, PD 31) which receives optical signals (fig. 11, the signal from element 30 to PD 13) from an output port (the output from element 30) and measures the power in the optical signals. Sugaya differs from the claimed invention in that Sugaya does not specifically disclose that the wavelength select unit is a wavelength select switch. However, a wavelength select switch is well known in the art. For example, Prohaska discloses a wavelength select switch (fig. 7). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a wavelength select switch, such as the one taught by Prohaska, in the system of Sugaya to replace the wavelength select unit in order to select a wavelength within a short switching time. The modified system of Sugaya and Prohaska differs from the claimed invention in that Sugaya and Prohaska do not specifically teach displaying an indication of the optical signal power in the optical signal on a monitor to a system administrator. However, it is well known in the art to display an indication of measured optical power to a system administrator. For example, Felger discloses display an indication of measured optical power (fig. 1, power display 37) to a system administrator. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made

to include an optional local alarm indicator, as it is disclosed by Felger, in the modified system of Sugaya and Prohaska in order to provide an alarm signal to indicate the status of the system.

Regarding claims 3 and 14, Sugaya teaches that the optical signal comprises different wavelengths of optical energy (column 3, line 61 to column 4, line 4).

Regarding claims 4-5 and 15-16, Sugaya teaches an optical tap or power splitter (fig. 11, optical tap 22) that diverts a portion of optical signals incident on an optical medium to obtain the optical signals.

Regarding claim 11, Sugaya further discloses controlling an optical amplifier (fig. 11, combination of 25, 26, 27, 28, and 29) in accordance with the power of the optical signal to regulate optical power of the optical signals on the transmission medium (column 3, line 61 to column 4, line 4).

Regarding claim 17, the modified system of Sugaya, Prohaska, and Alexander can be applied measure DWDM signals since Prohaska discloses that the wavelength select switch can be used for DWDM signals (paragraph 0002).

Regarding claims 24 and 25, Sugaya further discloses that the power meter (fig. 11, PD 13) measures the combined power of the optical signals.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya (U.S. Patent US 6,873,795 B1) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) and Felger et al. (U.S. Patent US 5,521,701) and further in view of Solomon (U.S. Patent US 4,903,339).

Regarding claim 10, the modified system of Sugaya, Prohaska, and Felger differs from the claimed invention in that Sugaya, Prohaska, and Felger do not specifically disclose determining if the power in the optical signal has passed a predetermined threshold and triggering an alarm if the power in the optical signal has crossed the predetermined threshold. However, it is well known in the art to determine if the power in the optical signal has passed a predetermined threshold and trigger an alarm if the power in the optical signal has crossed the predetermined threshold. For example, Solomon discloses that it is well practiced in the art to determine if the power in the optical signal has passed a predetermined threshold and trigger an alarm if the power in the optical signal has crossed the predetermined threshold (column 1, lines 25-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate an alarm trigger circuitry, as it is disclosed by Solomon, in the modified system of Sugaya, Prohaska, and Felger in order to inform a system administrator that a malfunctioning occurs in an optical communication system.

6. Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya (U.S. Patent US 6,873,795 B1) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) and Felger et al. (U.S. Patent US 5,521,701) and further in view of Alexander et al. (U.S. Patent US 5,986,782).

Regarding claims 7 and 18, Sugaya, Prohaska, and Felger have been discussed above in regard with claims 1 and 12. Sugaya further teaches successively directing

optical signals through the wavelength select switch cycles others of the optical signals to the other output port (fig. 11, the output from element 13 to PD 14) and the power meter (fig. 11, PD 14) measures power in the others of the optical signals (column 13, lines 35-51). The modified system of Sugaya, Prohaska, and Felger differs from the claimed invention in that Sugaya, Prohaska, and Felger do not specifically disclose that the optical powers are detected with one power meter. However, it is well known in the art to detect optical powers using one power meter. For example, Alexander discloses to use one power meter to detect optical signals (column 4, lines 49-60). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a optical power meter to detect the powers of optical signals, as it is taught by Alexander, in the modified system of Sugaya and Prohaska in order to reduce the number of power meters needed.

Response to Arguments

7. Applicant's arguments in regard with claim 1 filed on April 19, 2007 have been considered but they are not persuasive.

Applicant argues that Heston discloses a PIAOTF which is not a wavelength select switch. Examiner respectfully disagrees with Applicant. Heston clearly and explicitly teaches that "The equalizing stage of AOTF functions as a wavelength addressable analog switch" (see column 1, lines 4-7 on page 250). Therefore, the TOTF of Heston reads the claimed "wavelength select switch".

8. Applicant's other arguments filed on April 19, 2007 have been considered but are moot in view of the new ground(s) of rejection.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

qzw
4/30/2007

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